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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,421	01/20/2004	Chikuni Kawakami	0879-0425P	8089
2292	7590	05/25/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			SUTHAR, RISHI S	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,421

Applicant(s)

KAWAKAMI, CHIKUNI

Examiner

Rishi Suthar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 21-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/12/06 has been entered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the three types of LED light sources in claim 7 for emitting red, green and blue light being radially placed must be shown or the feature(s) canceled from the claim(s). Claims 6-10, dedicated to a second embodiment of the invention, are detailed in Figs. 7 and 8; however, three types of LED light sources are not shown in these drawings. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen (US 5,119,174).

Chen teaches a lighting apparatus in Figures 1-3 comprising a reflecting surface (21, bottom most portion of well where LED is placed) formed on a circuit board (12); an LED light source (15) mounted on a part of the reflecting surface; and a reflector (21, angled sidewall of well where LED is placed) being mounted directly on said circuit

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board and extending beyond an uppermost surface of the circuit board, having an opened rear closed off by the reflecting surface.

5. Claims 6 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by McDermott (US 6,227,685).

McDermott teaches in Figures 2, 8 and 9 a lighting apparatus comprising a circuit board (49); an LED light source mounted on said circuit board (via leads 32); a reflector (8) having an internal reflecting surface that surrounds the rear side and side surface sides of said LED light source, wherein said LED light source is placed clear of an internal reflecting surface of said reflector, such that said reflector reflects light emitted from said LED light source in a side direction and a rear direction of said LED light source in directions away from the circuit board.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 5,119,174) in view of Koay et al. (US 2002/0047130).

Chen teaches the invention as claimed above, but does not teach that the reflecting surface on the circuit board is formed by gold plating. Koay et al. teaches that

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gold plating on circuit boards is a conventional method in light sources (Koay et al; paragraph [0011]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the reflector of Chen by gold plating as is conventional for improving the light reflection properties.

8. Claims 3, 4, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 5,119,174) in view of Kitano et al. (US 2003/0216151).

Regarding claim 3, Chen teaches the invention as claimed above, but does not expressly disclose the LED is a surface mounted white LED. Kitano et al. teaches a LED light source which can use a white colored chip LED as the light source (Par. [0047], lines 2-4). It would be obvious to one of ordinary skill in the art at the time of applicant's invention to modify the light source of Chen to use a white colored surface-mounted chip LED as taught by Kitano et al. since it is conventional to use white surface mounted LEDs in lighting devices.

Regarding claim 4, Chen teaches the invention as claimed above but does not expressly disclose red, green and blue LED light sources. Kitano et al. teaches an LED light source where the LED light source is comprised of three types of LED light sources for emitting red light (22a), green light (23a), and blue light (24a), and the LED light source for emitting the light in each color is radially placed as shown in Fig. 3. It would be obvious to one of ordinary skill in the art at the time of applicant's invention to modify the light source of Chen to use an RGB LED light source as taught by Kitano et al. so as

to use the light source in order to provide a multi-color LED lighting display in a smaller space (Kitano et al., paragraph [0015]).

Regarding claim 11 and 12, Chen teaches the lighting apparatus as claimed above but does not teach an electronic flash apparatus of a camera or a camera comprising the lighting apparatus. Kitano et al. teaches an electronic flash of a camera and a camera using an LED light source. It would be obvious to one of ordinary skill in the art at the time of applicant's invention to use the light source of Chen in the electronic flash apparatus and camera of Kitano et al. since the light source of Chen provides a wide viewing angle and thus would be suitable for an electronic flash apparatus of a camera (Kitano et al., paragraph [0016]).

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 5,119,174) in view of Mouyard et al. (US 4,254,453).

Chen teaches the invention as claimed above, but does not expressly disclose an optical component placed on the reflector. Mouyard et al. teaches a lighting device comprising an optical component (52) placed on a reflector (40) for flooding an expanding the light emitted from the LED light source. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an optical component on the reflector of Chen in order to provide a wider viewing angle and improved contrast (Mouyard et al., col. 3, lines 28-35).

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10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over McDermott (US 6,227,685) in view of Kitano et al. (US 2003/0216151).

McDermott teaches the invention as claimed above, but does not teach three LED sources for emitting red, green and blue light. Kitano et al. teaches an LED light source where the LED light source is comprised of three types of LED light sources for emitting red light (22a), green light (23a), and blue light (24a), and the LED light source for emitting the light in each color is radially placed as shown in Fig. 3. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a multi-color LED arrangement as taught by Kitano et al. in the LED light source of McDermott in order to provide a white light which is suitable for flash photography.

11. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDermott (US 6,227,685) in view of Sommers (US 2003/0180037).

McDermott teaches the lighting apparatus as claimed above, but does not teach an electronic flash apparatus of a camera or a camera comprising the lighting apparatus. Sommers teaches an electronic flash apparatus (4) of a camera and a camera (1) which uses an LED flash apparatus in Fig. 1 (Par. [0020]). It would be obvious to one of ordinary skill in the art at the time the invention was made to use the lighting apparatus of McDermott in the electronic flash apparatus of a camera of Sommers since the lighting apparatus of McDermott improves the efficiency of the device by maximizing the light outputted and would thus decrease the amount of power needed.

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12. Claims 1, 5 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. (US 4,306,716) in view of Chen (5,119,174).

James et al. teaches a lighting apparatus comprising a circuit board (70); an LED light source (42-44); and a reflector for reflecting ahead the light emitted from the light source mounted on the circuit board and extending beyond an uppermost surface of the circuit board so as to surround the LED light source. James et al. does not expressly disclose a reflecting surface formed on the surface board. Chen discloses a lighting apparatus where a circuit board has a reflecting surface with LED light sources mounted on it. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a reflective surface on the circuit board of James et al. as taught by Chen since coating circuit boards is a conventional method for improving efficiency of a lighting system by maximizing the use of the light emitted from the LED light sources

Regarding claims 5 and 21-23, the combination of James et al. and Chen teach an optical element (74 in James et al.); and a circuit board (70 in James et al.) with a mounting hole (81, 82 in James et al.) and the reflector is provided with a claw (83, 84) that engages with a periphery of the mounting hole.

Response to Arguments

13. Applicant's arguments with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection.

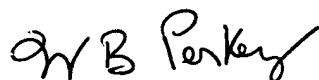
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Telephone Numbers

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rishi Suthar whose telephone number is 571-272-8456. The examiner can normally be reached on M-Th 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Rishi Suthar
Examiner
Art Unit 2851

William Perkey
Primary Examiner

RS